

**I claim:**

1. A wheel rim device with patterned light capable of automatically generating electric power, the wheel rim device comprising:

a wheel rim with wheel spokes and a wheel axle disposed thereon, an  
5 accommodating room being concavely provided on an end face of said  
wheel axle;

an automatic generating assembly arranged in said accommodating room of  
said wheel rim for generating an AC voltage when said wheel rim rotates;

a rectifier/filter circuit connected with said automatic generating assembly to  
10 rectify and filter the AC voltage generated by said automatic generating  
assembly to obtain a DC voltage;

a circuit board connected on one said wheel spoke of said wheel rim and  
having a plurality of one light emitting components; and

a programmable chip disposed on said circuit board and connected with said  
15 rectifier/filter circuit and said light emitting components, said programmable  
chip being used to drive said light emitting components to generate various  
glittering and jumping dynamic variations for accomplishing the effect of  
persistence of vision according to different timings of the output waveform  
of said programmable chip when said rectifier/filter circuit outputs a DC  
20 voltage, the color mixing effect being also accomplished between said light  
emitting components to display different color lights.

2. The wheel rim device as claimed in claim 1, wherein said programmable  
chip is formed by integrating an oscillator, a frequency selector, a ROM, a  
counter, a pattern memory and a buffer into a single chip microcontroller.

3. The wheel rim device as claimed in claim 2, wherein said programmable

chip has a power source terminal, a trigger terminal and several I/O terminals, said power source terminal is connected to an output terminal of said rectifier/filter circuit, and each of said I/O terminals is connected with one of said light emitting components.

5 4. The wheel rim device as claimed in claim 1, wherein said automatic generating assembly is connected with one or more light emitting components.

5. The wheel rim device as claimed in claim 1, wherein said automatic generating assembly has a shell cover having a closed face, a first cavity and  
10 a second cavity are provided on an inner face of said shell cover, said first cavity is smaller than said second cavity, an induction coil is annularly disposed in said first cavity, a magnetic component is also assembled in said first cavity, a heavy hammer is pivotally disposed at an axle portion of said magnetic component, said heavy hammer is always maintained in a vertical  
15 direction due to gravity, said heavy hammer is disposed on an inner periphery face of said second cavity, lead-out wires are extended from two distal ends of said induction coil and connected to said rectifier/filter circuit, and said induction coil generates an induced electromotive force when said wheel rim rotates.

20 6. The wheel rim device as claimed in claim 1, wherein several holes are annularly disposed on an inner face of said accommodating room of said wheel rim.

7. The wheel rim device as claimed in claim 1, wherein positioning components are annularly disposed on an outer periphery face of said shell  
25 cover of said automatic generating assembly, and several screwing

components pass through said positioning components to be firmly screwed to said holes of said wheel axle.

8. The wheel rim device as claimed in claim 1, wherein said rectifier/filter circuit is disposed on said circuit board.

5 9. A wheel rim device with patterned light capable of automatically generating electric power comprising:

a wheel rim having a wheel rim cover, an accommodating room being concavely provided in said wheel rim cover;

10 an automatic generating assembly arranged in said accommodating room of said wheel rim cover for generating an AC voltage when said wheel rim rotates;

a rectifier/filter circuit connected with said automatic generating assembly to rectify and filter the AC voltage generated by said automatic generating assembly to obtain a DC voltage;

15 a cover plate connected with said accommodating room of said wheel rim cover;

a circuit board connected on said wheel rim cover and having more than one light emitting components; and

20 a programmable chip disposed on said circuit board and connected with said rectifier/filter circuit and said light emitting components, said programmable chip being used to drive said light emitting components to generate various glittering and jumping dynamic variations for accomplishing the effect of persistence of vision according to different timings of the output waveform of said programmable chip when said rectifier/filter circuit outputs a DC  
25 voltage, the color mixing effect being also accomplished between said light

emitting components to display different color lights.

10. The wheel rim device as claimed in claim 9, wherein said programmable chip is formed by integrating an oscillator, a frequency selector, a ROM, a counter, a pattern memory and a buffer into a single chip microcontroller.

5 11. The wheel rim device as claimed in claim 10, wherein said programmable chip has a power source terminal, a trigger terminal and several I/O terminals, said power source terminal is connected to an output terminal of said rectifier/filter circuit, and each of said I/O terminals is connected with one of said light emitting components.

10 12. The wheel rim device as claimed in claim 9, wherein said automatic generating assembly is connected with one or more light emitting components.

13. The wheel rim device as claimed in claim 9, wherein said light emitting components are assembled on said wheel rim cover.

15 14. The wheel rim device as claimed in claim 9, wherein said light emitting components are assembled on both said wheel rim cover and said cover plate.

15. The wheel rim device as claimed in claim 9, wherein said automatic generating assembly has a shell cover having a closed face, a first cavity and  
20 a second cavity are provided on an inner face of said shell cover, said first cavity is smaller than said second cavity, an induction coil is annularly disposed in said first cavity, a magnetic component is also assembled in said first cavity, a heavy hammer is pivotally disposed at an axle portion of said magnetic component, said heavy hammer is always maintained in a vertical  
25 direction due to gravity, said heavy hammer is disposed on an inner

periphery face of said second cavity, lead-out wires are extended from two distal ends of said induction coil and connected to said rectifier/filter circuit, and said induction coil generates an induced electromotive force when said wheel rim rotates.

- 5 16. The wheel rim device as claimed in claim 9, wherein positioning components are annularly disposed on an outer periphery face of said shell cover of said automatic generating assembly, and several screwing components pass through said positioning components to be firmly screwed to said wheel rim cover.